REMARKS

Claims 2-4 have been cancelled. Reconsideration is respectfully requested for Claims 1, 11, and 12, as amended, said claims have been variously rejected as follows.

Claim 1 has been rejected under 35 USC 112. However, the amendment to Claim 1 is believed to bring Claim 1 into compliance with 35 USC 112.

Claims 1, 11, and 12 have been rejected under various combinations of US Patent No. 5,401,727; the paper presented by Y. Adachi, et al. in July of 1999; and U.S.Patent No. 5,858,776 to Ostrand Rosenberg.

These rejections are respectfully traversed.

Claim 1, as amended, calls for the upregulating, co-stimulating molecules to be selected from the group of molecules consisting of B7.1, B7.2 and B7.3, and the glucan to be selected from the group consisting of B1, 3-glucans and B1, 6-glucans, causing the upregulating of the co-stimulatory molecules, with the co-stimulatory molecules providing a second signal to that lymphocytes causing that lymphocyte to differentiate into armed effector cells.

The elements of Claim 1 simply are neither disclosed, taught nor even suggested by the cited references, taken alone or in combination.

For example, in the patent to Rorstad, et al., there is described the use of glucopyransoe units linked by beta -1,3 glycosidic bonds, having at least one branch of glucopyranose units linked by beta-1,6 glycosidic bonds.

The Abstract of the paper presented by Adachi, et al., there is only the suggestion that IFN-gamma may stimulate macrophages to enhance expression of adhesion molecules, and the further suggestion that induction of antigen specific CTL in the presence of SSG was mediated by production of IL-12 and IL-15, or expressions of ICAM-1, B7-1 and B7-2 via augmentation of INF Gamma production.

U.S. Patent No. 5,858,776 to Ostrand Rosenberg, et al., while discussing the presence of a B lymphocite antigen B7, uses a antigen-MHC molecule complex to deliver the activation signal to the T-cell.

In sharp contract, the present invention, as defined by Claim 1, uses a B1, 3-glucan or a B1, 6-glucan to upregulate the co-stimulatory molecules (B7.1, B7.2 or B7.3), causing such molecules to provide a second signal to be sent to the T lymphocytes, causing the lymphocytes to differentiate into armed effector cells.

It is therefore respectfully submitted that Claim 1, as amended, is patentable over the art of record.

Claims 11 and 12 have been rejected, in essence, upon the disclosure in Adachi, et al. However, although the reference is silent concerning its use as a vaccine, the Examiner alleges that the mode of administration, is well within the level of one skilled in the art, and the artisan would be motivated to determine optimum amounts, while minimizing unwanted side effects.

However, Claim 11 is much more than that. For example, it calls for the vaccine adjuvant to comprise partially deacetylated N-acetly glucosamine with a free amino group, as well as the step of conjugating the vaccine onto the free amino group.

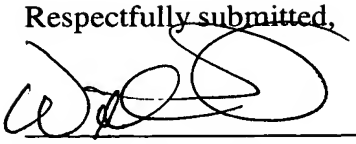
Dependent Claim 12 calls for the glucan to include about 1-10% by weight chitin or partially deacetylated N-acetylglucosamine.

These elements in Claims 11 and 12 are not shown in the art of record.

It is respectfully submitted that Claims 1, 11, and 12 are in prima facia condition for allowance.

The requested check in the amount of $510 is enclosed to cover the three month extension fee, however, should the check not be enclosed or be insufficient, then any additional amounts which may be due should be deposited in the account of 13-2166.

Respectfully submitted,



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